UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/816,391 | 03/26/2001 | Minoru Fujimori | 2001-0206A | 7242 |

513 7590 01/02/2003

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

| EXAMINER | |
|---|---|
| WHITEMAN, BRIAN A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1635 | 18 |

DATE MAILED: 01/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/816,391 | FUJIMORI ET AL. | |
| | Examiner | Art Unit | |
| | Brian Whiteman | 1635 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 April 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *3-32* is/are pending in the application.

4a) Of the above claim(s) *6,7,15,17,18,23 and 25-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-5,8-14,16,19-21,24 and 28-31* is/are rejected.

7)☐ Claim(s) *22 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *5/29/02* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### Final Rejection

Claims 3-5, 8-14, 16, 19-22, 24, and 28-31 are pending examination.

Applicants' traversal, the cancellation of claims 1, 2, 26, amendments to the specification and claims (3, 4, 12-25), the addition of claims 28-31 in paper no. 17 are acknowledged and considered.

***Priority*** Applicants' submission of a certified English translation of foreign application Japan 2000-287688 filed on 9/21/00 is acknowledged.

### *Specification*

The objection to the abstract of the disclosure is moot in view of the amendment to the abstract.

The objection to the disclosure is moot because of the clarification set forth by the applicants.

### *Claim Objections*

The objection to claims 12-21, 24, and 25 are moot in view of the amendment to these claims.

The objection to Claim 26 is moot because of the cancellation of claim 26.

Claim 22 remains objected to because of the following informalities: grammatical error in the claim, suggest amending the claim to read "A genetically modified bacterium, wherein the bacterium is a *Bifidobacterium longum* 105-A/pBLES100-S-eCD E having the deposit accession number FERM BP-7274". Appropriate correction is required.

Claim 14 is objected to because the claim does not further limit the claims from which it depends.

Claims 4-6 remain and claims 12, 13, 15-21, and 24-25 are objected to because of the following informalities: reads on a non-elected species.

This application contains claims 4, 6, 7, 17-18, 23, 25, 27 drawn to an invention non-elected invention or species without traverse in Paper No.13 or because of the amendment to the claims. A complete reply to the final rejection must include cancellation of non-elected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

The rejection under 112 first paragraph for claim 22 is moot in view of the Deposit Declaration submitted by applicants' representative.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3-5 and 8-11 remain and claims 12-14, 16, 19-21, 24 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for 1) A method for specifically delivering to tumor tissues under anaerobic conditions in an individual with cancer a genetically modified bacterium, wherein the genetically modified bacterium is a *Bifidobacterium longum*, which comprises a DNA sequence coding for a protein; 2) The method of 1, wherein the genetically modified bacterium comprises an expression vector comprising a DNA sequence coding for a protein, 3) The method of 2, wherein the expression vector has a promoter and a terminator that specifically function in a *Bifidobacterium longum*, wherein the promoter and

terminator are operatively linked to the DNA sequence; 4) The method of 3, wherein the promoter is a nucleotide sequence consisting of 1 to 192 of SEQ ID NO: 1 and the terminator is a nucleotide sequence consisting of 472 to 600 of SEQ ID NO: 1; 5) A method of treating a solid tumor in an individual with cancer comprising administering genetically modified *Bifidobacterium longum* to the individual, wherein the genetically modified *Bifidobacterium longum* comprises a DNA sequence coding for a protein having anti-tumor activity, and does not reasonably provide enablement for other claimed embodiments embraced by the breadth of the claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

> Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized in In re Wands, 858 F.2d 731, 8USPQ2d 1400 (Fed. Cir. 1988). They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

The field of the invention is using a bacterium from the genus *Bifidobacterium* as a gene delivery vector comprising a gene used in a method of delivering the gene delivery vector to tumor tissues under anaerobic conditions.

Furthermore, and with respect to claims directed to any vector useful for gene therapy and directed to expression in of a gene in a mammal; the state of the art in 1998, exemplified Anderson et al., *Nature*, Vol. 392, pp. 25-30, April 1998, displays major consideration for any gene transfer or any DNA therapy protocol involve issues that include:

1) The type of vector and amount of DNA constructs to be administered,

2) The route and time course of administration, the sites of administration, and successful uptake of the claimed DNA at the target site;

3) The trafficking of the genetic material within cellular organelles, the rate of degradation of the DNA, the level of mRNA produced, the stability of the mRNA product, the amount and stability of the protein produced, and

4) What amount of the expressed proteins considered to be therapeutically effective for a DNA therapy method.

In addition, all of these issues differ dramatically based on the specific vector used, the route of administration, the animal being treated, therapeutically effective amount of the DNA, and the disease being treated.

Anderson teaches that gene therapy is a powerful new technology that still requires several years before it will make a noticeable impact on the treatment of disease, and that several major deficiencies still exist including poor delivery systems, both viral and non-viral, and poor gene expression after genes are delivered (pp. 25-30).

Anderson further teaches that the reason for the low efficiency of gene transfer and expression in human patients is that we still lack the basis understanding of how vectors should be constructed what regulatory sequences are appropriated for which cell types (page 30, column 1, last paragraph). Furthermore, Verma, *Nature*, Vol. 389, pages 239-242, 1997, indicates that factors including the nature of the diseases and/or disorders, the nature of a DNA and/or target tissue, and a delivery system and/or amounts of the DNA complexes employed in the delivery system that would generate a therapeutic effect *in vivo* must be considered for any gene therapy method to be successful (page 238, columns 1 and 2).

In addition, the state of the art for *Bifidobacterium* as exemplified by Yazawa et al. (Breast Cancer Research and Treatment, Vol. 66, pp. 165-170, 2001) teaches that:

> *Bifidobacterium* is non-pathogenic bacteria found in the intestine of human and some other mammalian animals. These organisms are believed to have health-promoting properties for their host, including increase of the immune response, inhibition of carcinogenesis, and protection of the host against viral infections. However, despite increasing attention to this bacterium in many fields, little is known about its genetic property (page 165).

Furthermore, the state of the art for transforming bacterium from the genus *Bifidobacterium* is highly unpredictable as exemplified by Argnani et al. (IDS, Microbiology, Vol. 142, pp. 109-114). Argnani teaches:

> Although electroporation technique has proven to be widely applicable to genetically transform bacterial strains, all Bifidobacterium so far examined have proved refractory to efficient and reproducible transformation (page 109).

Yazawa, whom teaches that, further supports this:

> To be able to exploit the potential of these organisms for cancer gene therapy, detailed knowledge is required about such basic biological phenomena as cellular metabolism, gene expression, protein secretion, and genetics. Yazawa further states that, studies on Bifidobacterium at the molecular level are severely limited in the absence of an efficient transformation. Recently, Matsumura and colleagues developed a system for convenient and reproducible genetic transformation of B. longum (page 169).

The as-filed specification provides several working examples displaying the transformation of *Bifidobacterium longum* with a gene and the deliver of the genetically modified bacterium to tumor-bearing mice (pages 46-61). The delivery displayed that the

bacterium specifically targeted the tumors (page 48). In addition, one example displays the production of a genetically modified bacterium comprising a cytosine deaminase (CD) gene and an example introducing the bacterium, which was specifically expressed only in tumor tissues under anaerobic conditions in tumor-bearing mice (pages 55-61).

In view of the as-filed specification and the state of the art for using bacteria as a gene delivery vector, the claimed invention is only enabled for producing and using the *Bifidobacterium longum* comprising a gene for use in specifically delivering to tumor tissues under anaerobic conditions in a mammal because the as-filed specification and the state of the art do not provide sufficient guidance for one skilled in the art to reasonably extrapolate from using *Bifidobacterium longum* to using the genus *Bifidobacterium* without an undue amount of experimentation. The state of the art as taught by Argnani and Yazawa display that studies on Bifidobacterium at the molecular level are severely limited in the absence of an efficient transformation. Therefore, the state of the art is considered unpredictable and the as-filed specification does not provide sufficient guidance for one skilled in the art to make and/or use a representative number of bacterium from the genus *Bifidobacterium* as gene delivery vectors.

As a result, it is not apparent how one skilled in the art determines, without undue experimentation, which of the claimed bacterium from the genus *Bifidobacterium* other than the *Bifidobacterium longum* can be genetically modified and used as a gene delivery vector, how is it apparent as to how one skilled in the art, without any undue experimentation, practices any nucleic acid delivery method as contemplated by the claims, particularly given the unpredictability of nucleic acid therapy as a whole and/or the doubts expressed in the art of record.

In addition, with respect to claim 24 directed to treating a solid tumor, the claimed method encompasses using a DNA encoding a protein with/without anti-tumor activity. The specification provides sufficient guidance or evidence for one skilled in the art to use a DNA encoding a protein with anti-tumor activity, but does not provide sufficient guidance for one skilled in art to reasonably correlate using a protein with anti-tumor activity to the full scope of the claimed method encompassing using any protein without anti-tumor activity (e.g. Factor VIII, dystrophin, HIV, etc.). Thus, the claimed method is only enabled for using a DNA encoding a protein having anti-tumor activity and not for the full breadth of the claimed method.

Furthermore, with respect to claim 24 directed to treating a solid tumor, the specification only provides sufficient guidance for treating a solid tumor in an individual with cancer. The breadth of the claimed methods encompasses targeting genetically modified bacteria to a solid tumor in any environment including an individual with cancer a solid tumor *in vitro* and the specification only teaches one skilled in the art how to use the method for targeting the bacteria to a solid tumor in an individual with cancer. The art of record is absent for using the claimed method on solid tumors *in vitro*. Thus, the as-filed specification does not teach one skilled in the art how to use the claimed method wherein the solid tumor is not in an individual with cancer.

In conclusion, the as-filed specification and claims coupled with the state of the art at the time the invention was made only provide sufficient guidance and/or evidence to reasonably enable the for 1-5 listed above. Given that gene therapy wherein any carrier is employed to correct a disease or a medical condition in any mammal was unpredictable at the time the invention was made, and given the lack of sufficient guidance as to a gene therapy effect produced by any gene delivery vector cited in the claims, one skilled in the art would have to

engage in a large quantity of experimentation in order to practice the claimed invention based on the applicant's disclosure and the unpredictability of gene therapy.

Applicants traverse the enablement rejection for claim because the claims have been amended to specific *Bifodbacterium* species and any of these bacteria are commercially available or easily obtainable from the depository organization. One of ordinary skill in the art is able to practice the claimed invention by using an operating these bacteria with fundamental protocols and methodologies of genetic engineering well known in the art. It is well understood under US practice that claims are not read in a vacuum but in light of teachings of the specification and the knowledge in the art. See page 8.

Applicants' traversal is acknowledged and is not found persuasive for the following reasons: In view of the In re Wands Factors, the as-filed specification only provides sufficient guidance or evidence for 1-5 listed above. More specifically, in view of the art of record at the time of filing (transforming bacterium from the genus *Bifidobacterium* is highly unpredictable as exemplified by Argnani et al.), it would take one skilled in the art an undue amount of experimentation to practice the full scope of the claims. It is acknowledged that the bacteria listed in the claims are easily obtainable from a depository organization, however, in view of the art of record citing the problems with transfecting species of the genus *Bifidobacterium*, the as-filed specification only provides sufficient guidance for one skilled in the art to genetically engineer *Bifidobacterium longum* and does not provide sufficient guidance or evidence for one skilled in the art to reasonably correlate making and using genetically modified *Bifidobacterium longum* to any other claimed species from the genus *Bifidobacterium*.

Thus, the rejection under 112 enablement remains for the rejection of record.

The rejections to claims 1-3 under 112 second paragraph are moot in view of the cancellation of claims 1 and 2 and the amendment to claim 3.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 12-14, 16, 19, 20, 21, 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12-14, 16, 19, 20, 21, 24 recite the limitation "any one of claims 3 to 11". There is insufficient antecedent basis for this limitation in the claims. The claims depend on Claims 6 and 7 and these claims are drawn to a non-elected invention

Applicants' traversal is not applicable to the 112 second paragraph rejection.

Claims 10-11, 13, 20, 22, and 32 are free of the prior art.

***Claim Rejections - 35 USC § 102***

The rejections under prior art for claims 1-2 and 26 are moot in view of the cancellation of these claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3 and 8-9 remain and claims 12, 14, 16, 19, 21, 24, and 28-31 are rejected under 35 U.S.C. 102(a) as being anticipated by Yazawa et al (IDS, Cancer Gene Therapy, Vol. 7, pp. 269-274, March 2000). Yazawa teaches using a genetically engineered *Bifidobacterium longum* comprising an expression vector comprising a gene coding for spectomycin adenyltransferase in a method of delivering the bacterium to solid tumor tissues in a mouse (abstract and pages 269-271).

Applicants traverse the rejection for the following reasons: This rejection is overcome by Declaration under 1.131 showing diligence and reduction to practice of the claimed invention. See page 9.

Applicants' traversal is acknowledged and is not found persuasive because an inventor(s) did not sign the Declaration. In addition, as stated in the traversal, "5 out of 7 researchers listed on the article are inventors for the claimed invention". However, there is no evidence that the other 2 researchers should not be listed as co-inventors.

Claims 3-4 and 8-9 remain and claims 12, 14, 16, 19, 21, 24, and 28-31 are rejected under 35 U.S.C. 102(a) as being anticipated by Babincova et al. (Life and Medical Sciences Online, http://www.itrust.de/lamso/lpext.dll.Infobase0?title0003.htm?fn=docu 8/7/2000, pp. 1-4). Babincova teaches introducing a gene encoding a luciferase into the genome of *Bifidobacterium longum* and using the genetically modified bacteria comprising the luciferase gene in a method of destroying neoplastic cells (page 3-4). Babincova further teaches that *Bifidobacterium longum* is a nonpathogenic bacterium that selectively grows in hypoxic regions of tumors after systemic application (abstract).

Applicants traverse the rejection for the following reasons: This rejection is overcome by Declaration under 1.131 showing diligence and reduction to practice of the claimed invention. See page 9.

Applicants' traversal is acknowledged and is not found persuasive because an inventor(s) did not sign the Declaration. In addition, as stated in the traversal, "5 out of 7 researchers listed on the article are inventors for the claimed invention". However, there is no evidence that the other 2 researchers should not be listed as co-inventors.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-5 and 8-9 remain and claims 12, 14, 16, 19, 21, 24, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babincova et al. (Life and Medical Sciences Online, http://www.itrust.de/lamso/lpext.dll.Infobase0?title0003.htm?fn=docu 8/7/2000, pp. 1-4) taken with Tagliabue et al. (WO 96/11277). Babincova teaches introducing an anti-tumor gene into the genome of *Bifidobacterium longum* and using the genetically modified bacteria comprising the gene in a method of destroying neoplastic cells (page 3-4). Babincova further teaches that *Bifidobacterium longum* is a nonpathogenic bacterium that selectively grows in hypoxic regions of tumors after systemic application (abstract). However, Babincova does not specifically teach introducing a DNA coding for an interleukin-2 protein into a *Bifidobacterium longum* and using the genetically modified bacterium in a method of delivering the DNA coding for the protein having an anti-tumor activity to tumor tissues under anaerobic conditions.

However, at the time the invention was made, Tagliabue teaches methods and compositions for delivery of therapeutic compounds to a mammal by administration of a recombinant bacterium to the animal, the bacterium encoding a therapeutic protein (abstract). Tagliabue further teaches that the bacterial microorganism can selected from several bacteria including *Bifidobacterium longum* (page 10, lines 5-10 and page 10, lines 12-20). In addition, Tagliabue teaches that the gene can code for a protein selected from the interleukin protein family including IL-2 (page 13-14).

It would have been *prima facie* obvious to a person of ordinary skill in the art at the time the invention was made to modify the teaching of Babincova in further view of Tagliabue, namely to produce a genetically modified *Bifidobacterium longum* comprising a nucleic acid sequence encoding a interleukin-2 (IL-2) protein for use in a method of delivering the genetically modified bacterium to tumor tissues under anaerobic conditions. One of ordinary skill in the art would have been motivated to introduce the gene encoding IL-2 into *Bifidobacterium longum* because the bacterium is a nonpathogenic anaerobic bacterium, which can selectively localize to solid tumors in a mammal after systemic application and IL-2 was well known to one of ordinary skill in the art for its anti-tumor activity.

Therefore the invention as a whole would have been *prima facie* obvious to one ordinary skill in the art at the time the invention was made.

Applicants traverse the rejection for the following reasons: This rejection is overcome by Declaration under 1.131 showing diligence and reduction to practice of the claimed invention. See page 9.

Applicants' traversal is acknowledged and is not found persuasive because an inventor(s) did not sign the Declaration. In addition, as stated in the traversal, "5 out of 7 researchers listed on the article are inventors for the claimed invention". However, there is no evidence that the other 2 researchers should not be listed as co-inventors.

Claim 32 is objected to as being dependent upon a rejected base claim (claim 28), but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Whiteman whose telephone number is (703) 305-0775. The examiner can normally be reached on Monday through Friday from 7:00 to 4:00 (Eastern Standard Time), with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John L. LeGuyader, SPE - Art Unit 1635, can be reached at (703) 308-0447.

Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center number is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Brian Whiteman
Patent Examiner, Group 1635
12/26/02

DAVE T. NGUYEN
PRIMARY EXAMINER